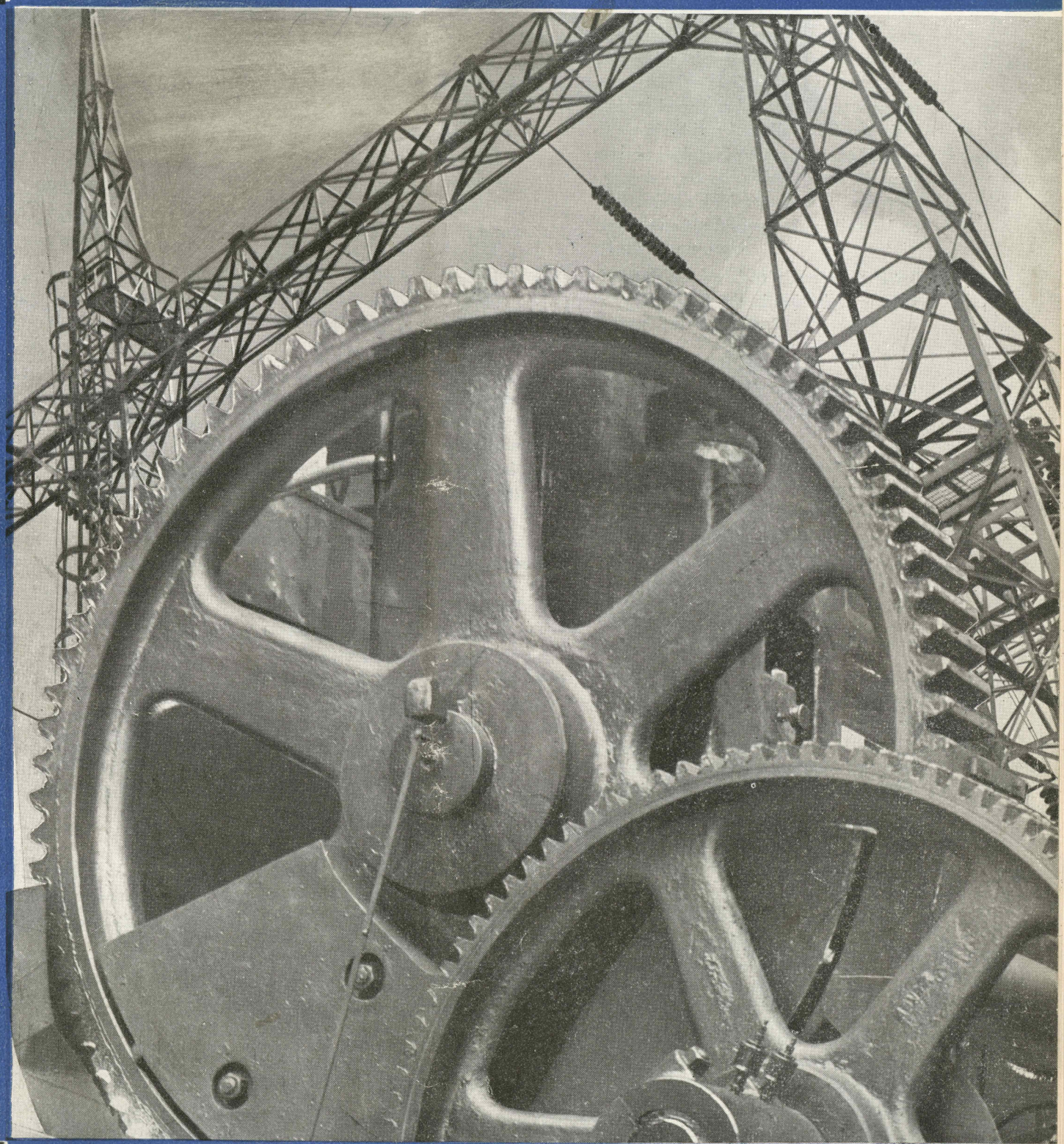
Changed title from: Federation of Tech. Eng. Draftsmen. Nat. Bull.
NOV 18 '37

AECT

TECHNICAL AMERICA



1937

8

NOVEMBER

PRODUCTIVE CAPACITY AND THE ENGINEER

By Dr. Walter N. Polakov

WHAT OF THE KILOWATT?

THIRD NATIONAL CONVENTION

15¢

IN THE Mail

FROM OUR FRIENDS

On the Convention

"It is with regret that I send you this little note of felicitation in place of addressing you personally. Pressure of work makes that at this time impossible. It is my conviction that the future of mankind no longer lies with the owners of the means of production, but with the workers with hand and brain who make that production possible. Your role as brain workers to guide the hand workers is a basic one. The full power of brain workers will never be realized until all of them —as the hand workers now are doing— unite to remove the shackles that now enchain all workers with hand and brain."

PAUL DE KRUIF.

"I stand ready to be of assistance to your organization in the future."

BERNHARD J. STERN.

"I wish that circumstances were such that I could be with you." (EDITORIAL NOTE: At the FAECT National Convention).

ROBERT F. WAGNER.

"I should like very much to be able to accept your invitation, but it will be impossible for me to be away from New York at that time."

LANGDON POST.

"Best wishes for enthusiastic and successful meeting."

GOV. ELMER A. BENSON.

"I think there is no more important relationship in the field of the building industry than that between the younger and the older members of the architectural profession and that it is of vital importance that this relationship should be continued as a harmonious and mutually cooperative one."

FRANCIS P. SULLIVAN, A.I.A.

"We subscribe fully to your statement that 'all organizations of technical employees have many economic and professional problems in common.' With this point in view, you may rest assured that the Civil Service Technical Guild will always be found ready and willing to cooperate with your organization in any effort to eradicate present conditions and to raise the remuneration of the technician until it is commensurate with that paid other highly trained professional groups."

HENRY F. CUNNINGHAM, Pres.

"I am keenly interested in the part to be played by men of professional training in the profound changes which undoubtedly lie ahead, as well as in their status after those changes are effected. I should very much like to be kept informed as to the proceedings of the convention."

ALBERT SPRAGUE COOLIDGE,
Division of Chemistry,
Harvard University.

"I agree that all organizations of technical employees have many economic and professional problems in common and that all such organizations must cooperate to the end that all of us will be able to raise the standards of our profession."

GEORGE A. HEAP,
Executive Secretary,
National Engineers Guild.

"Your entry into the CIO has placed your organization as the most outstanding group of its kind. The Chemical Division in New York of the United Mine Workers of America is prepared to cooperate with you to every possible extent. Forward to organization of every technical employee in America."

SAMUEL MACHLIS,
Chemical Workers of UMWA.

"On behalf of the Executive Board of the Transport Workers Union of America, allow me to extend our fraternal greetings to your officers and members and convention."

MICHAEL J. QUILL, President.

"We wish you every success in your drive to organize the technical workers in the United States."

MERVYN RATHBORNE, President.
Am. Radio Telegraphers Association.

"We extend to you our best wishes for a harmonious and constructive convention and a prosperous year in your organizational activities."

S. H. DALRYMPLE, President,
United Rubber Workers of America.

"We ardently greet your convention devoted to great cause of aiding workers everywhere."

PROKOFIEV, Chairman,
All-Union Bureau,
Moscow, USSR.

in this issue

Page

Features

In the Mail 2

Productive Capacity and the Engineer 3
By Dr. Walter N. Polakov

*Something to Think About 5
By Daniel Stone

What of the Kilowatt? 6
By Alexander H. Kuhnel

Third National Convention 9
By Marcel Scherer

CIO Conference 14

Can Labor Get Together? 15

Books—Exhibits 17

Editorials

Discord at Denver 7

A Hope for Unity 7

Sheridan's Attack 7

Organization

Our New Officers 8

Pittsburgh Prefers CIO 11

A Progressive Step 11

Men of "Magic" 12

Federation Activities 13

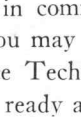
Auxiliary Affairs 16

Baum Scores First Homer 16

"I am to express the best wishes of my Committee for the continued prosperity and advancement of your Federation."

PETER DOIG, General Secretary,
The Association of Engineering and Ship-Building Draughtsmen,
London, England.

(*Continued on page* 19)



THIS handsome pin, made of sterling silver and faced with blue enamel, is being worn by all Federation members. Your Chapter will supply you with yours for fifty cents, or you may order direct from the National Office, 22 East 17 street, New York, N. Y.

TECHNICAL AMERICA is published monthly by the Federation of Architects, Engineers, Chemists and Technicians, at the National Office, 22 East 17th Street, New York, N. Y. TECHNICAL AMERICA aims to keep all technical employees informed of developments in their profession of a cultural or economic nature. All readers are invited to submit articles, photographs or correspondence that they consider of interest. Articles should be brief and typewritten on one side of paper, double-spaced. Single copies of TECHNICAL AMERICA, 15 cents, yearly $1.50. Advertising rates on request. Applications for entry as second class matter is pending. Nov. 1937, Vol. IV, No. 8.

TECHNICAL AMERICA

PUBLISHED BY FEDERATION OF ARCHITECTS, ENGINEERS, CHEMISTS AND TECHNICIANS

(Affiliated with the Committee for Industrial Organization)

VOL. IV. No. 8 November, 1937

PRODUCTIVE CAPACITY AND THE ENGINEER

By Dr. Walter N. Polakov

A distinguished paper delivered at the FAECT Third National Convention

AT THE outset, let us consider one of the contradictions of our existing economic set-up. Modern mass-production industry, equipped with labor-saving devices and actuated by automatic, power-driven machinery, can be run profitably only if operated continuously at near-full capacity output. Otherwise the heavy financial burden, not being spread thinly over the mass of output, drives the enterprise into bankruptcy, for the same product cannot be sold at a price sufficiently high to absorb the cost of the idle portion of the plant. And workers are dropped from the payroll, for production is carried on not for use but for profit.

But, even with full production, the ever-improving technique of power production and of managerial efficiency cuts down the demand for labor to produce the same or even greater output. Thus, the purchasing power of workers shrinks as the rate of production increases. Even if the employed worker can boast of a higher wage rate, he has unwittingly displaced his fellow-worker so that their combined purchasing power is no longer adequate to consume the potential output.

Consequently, the price of increased efficiency and increased productivity of labor is not only idleness of the permanently disemployed wage-earners, but also idleness of the plant and equipment, for its output has no purchasers.

Mass production depends upon mass consumption. Yet mass consumption is possible only with full employment and high wages; whereas mass production through increased efficiency reduces employment and total payroll, which in turn reduces purchasing power and, hence, total consumption.

This essential contradiction has for years been sensed by the more far-sighted students of our industrial trends. Thorstein Veblen, in his "Theory of Business Enterprise," said:

"The progress and activity of industry are conditioned by the outlook of the market . . . The vital factor is the vendibility of the output . . . not its serviceability for the need of mankind."

Likewise, the foremost American industrial engineer, H. L. Gantt, admitted in his "Organizing for Work" that:

"The aim of our efficiency has not been to produce goods, but to harvest dollars. If we could harvest more dollars by producing fewer goods, we produced the fewer goods."

For this reason our periodic depressions gain in severity, as technique and labor productivity advance without a corresponding advance in the general economic welfare of the masses. When the speculative boom of 1929 curtailed purchasing power the mines, plants and fields were laid idle, for there was little opportunity to harvest dollars, notwithstanding the fact that a very real physical need for food, clothing, shelter, fuel, etc., even before the boom, was not met by a large and increasing margin.

How great was that unsatisfied margin which could have been satisfied with the plants and equipment existing in 1929 was shown by a study of the National Survey of Potential Product Capacity. Substantially, it demonstrated that, while in that year our national domestic consumption of goods and services was about 94 billion dollars, it could have been 136 billion dollars, if only existing productive capacities at the existing state of technique were fully utilized, with due allowance, of course, for maintenance work, etc. Thus, at the pinnacle of our business prosperity, our national economy was restricting or, call it sabotaging, the production of 42 billion dollars' worth of goods and services.

At this point a question may legitimately be asked: "Was there any need for producing any more goods and services at that time?" The answer to this query was furnished by the conservative economists of the Brookings Institution who, in their volume, "America's Capacity to Consume," (p. 124), calmly estimated the extent by which the actual standard of living falls below the fictitious but much trumpeted "American standard of living."

"To reach these standards," Brookings' economists say, i.e., to attain the liberal diet and consume such necessities and comforts as are ordinarily associated with liberal diet, "would require an increase in the production of all kinds of consumers' goods and services by something like 70 or 80 percent."

Since then, as we all too well remember, the national income was cut nearly in two and even now has not regained its former level.

Mr. John Strachey justly calls this survey America's One-Year Plan, for among the many things it accomplished, it has worked out a detailed, balanced budget of all needs and taken an inventory of the means available of satisfying them on the basis of 1929 capacities. It estimated, as well as possible, the requirements for food, clothing, shelter, health, education, recreation, etc. It proved that the gap indicated by the Brookings Institution can be well-nigh filled with productive facilities already in existence. It evaluated and apportioned labor resources and requirements. Those who want to examine these findings can see them in the Report of the National Survey of Potential Product Capacity (Sponsorship: Langdon W. Post, N. Y. City Housing Authorities).

In evaluating this report Mr. Strachey said:

"The authors of the NSPPC report provided us with a demonstration of an exceedingly important economic principle. They did so when they decided that, in order to carry out their instructions to estimate America's capacity to produce wealth, they would have to make out a budget of the real needs of the American people, and to re-allot resources of production to meet these needs. For by doing these two things they, in effect, made an outline One-Year Plan for America. This was their great achievement.

"Their detailed demonstration of how a One-Year Plan of production for great industrial communities such as the United States and Britain could be, and will be, compiled is of unquestionable value. For it shows far better than could many pages of argumentation how socialist economic planning is done. It shows in particular and convincing detail how it will be possible to organize mighty and complex economic systems of production for use, and so establish general plenty and security. It shows what we could put in the place of the now grossly defective test of profitability as the regulating principle of production."

It is small wonder that Prof. Charles A. Beard hails this study as the most important book of the 20th century; that Stuart Chase's "The Economy of Abundance" is based upon its findings and observations from my recent book, "The Power Age"; that John Strachey's "Theory and Practice of Socialism" devotes much space to this momentous work; and that Mordecai Ezekiel got the inspiration for his "$2,500 a Year—From Scarcity to Abundance" in which he explored the several by-ways through which, some hope, the first stages of economy of abundance may be reached.

If the disclosures of the NSPPC report were shocking, exhibiting in cold figures the extent of deficiencies in essentials of life which could have been met with the available productive means, the intervening years of the last economic crisis widened this gap still further. Indeed, the economic scissors opened both ways—productivity of labor was raised and consuming capacity was lowered.

Calculated in 1926 dollar values, the value of manufactured output per worker has more than doubled since 1919 to the beginning of the crisis and has nearly trebled by now. Yet the earnings of workers during that period actually diminished. If in 1919 the worker was receiving $100, in 1931 he was receiving only $96 and in 1933 but $78, but his product which was valued at $100 in 1919 increased to $219 in 1931 and now is nearly $260.

TABLE A

Year	*Index, Av. Earnings*	*Value of Mfg'd Output per Worker (In 1926 Dollars)*
1919	92	$1,960
1921	94	2,710
1923	99	2,912
1925	101	3,073
1927	105	3,473
1929	107	3,750
1931	89	4,300
1933	72	
1935		

The deterioration of the real economic position of the worker is thus plainly seen, notwithstanding the propaganda by the Machinery and Allied Products Institute which, taking 1914 (pre-war year) as a base, attempts to show that a year's supply of clothing for a family of 4 requires as a price only 349.4 hours of average wages against 708.5 hours in 1914; men's work shoes could be earned in 3.4 hours of work in 1936 as against 9.3 hours in 1914, etc., etc. (These statistics were obtained by dividing the 1914 prices by 24.7c per hour and today's prices by 62.4c per hour.)

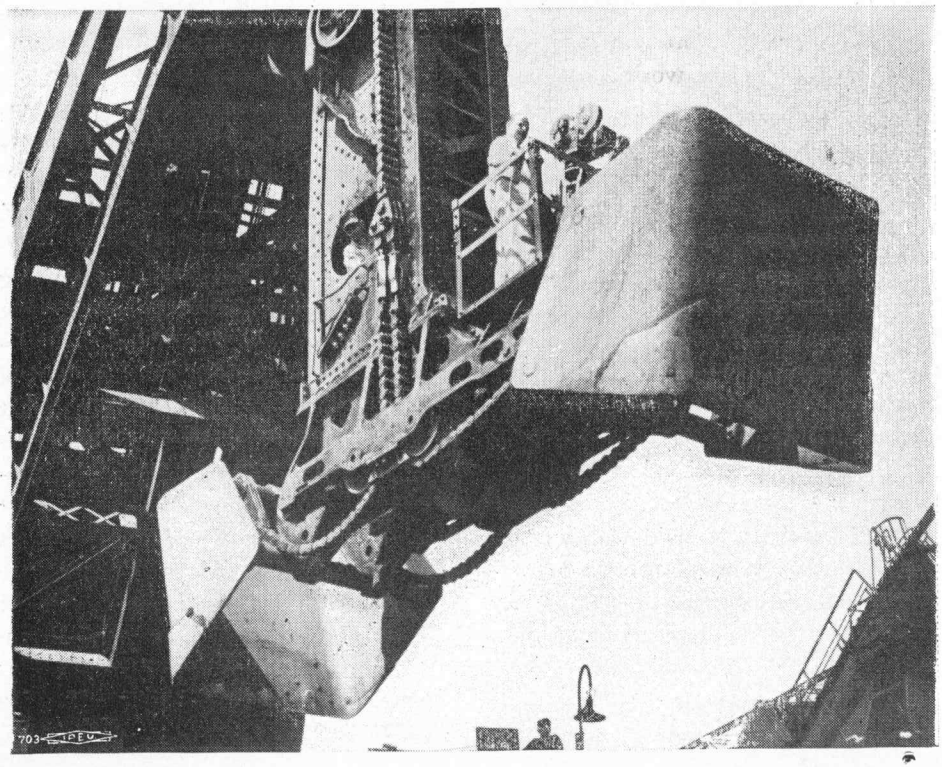
The conclusions, announced by the manufacturers, however, could hardly be refuted. Thus, they announced that:

"Technology . . . has made possible greater production per worker in most major industries" . . . and that "Technological development has made it possible for the United States to come closer to solving the problem of producing plenty than any other country in the world."

What has not been said and need be said over and over again is the obvious and baffling fact that as soon as one worker with the aid of advanced technology begins to produce twice as much as before, another worker is dropped off the payroll. This will go on as long as the consumption of his product does not increase so fast as his productivity. Now, suppose even that he earns double and can buy twice as much — what of that other fellow who became disemployed?

And so we are back in the squirrel cage, going 'round and 'round, getting nowhere. Was it not the Red Queen who said to Alice in Wonderland: "If you want to get somewhere else, you must run at least twice as fast as that."? (Through the Looking Glass, Chap. II).

(Dr. Polakov's interesting article will be concluded in our next issue.)



RADIO AUDIENCE HEARS FAECT PRESIDENT

"The Technician in Modern Society" was the subject of Robert Mifflin Sentman's talk over Station WJBK in Detroit.

In the pioneering days of American industry civil engineers, mechanical and electrical engineers, chemists, chemical engineers and architects made possible the expansion of our industrial economy, and in the process gained a measure of wealth and prestige for themselves, said Robert Sentman.

Today the era of expanding economy is over. The highly mechanized industries of today are forced to serve a restricted market. Restrictions, too, are now placed upon the use of the service of engineers whose contributions of skill must keep pace with the possibility for profitable productivity, while production in turn is geared at a rate so fast as to eliminate the element of premium on his services.

This premium is still paid, not to the engineer nor to the worker of the industry, but to its owners. The technical professional's security has vanished, Robert Sentman said, and he now finds himself to be no exception among the workers in placing his hope for economic betterment and technological development in the collective efforts of organized labor.

*SOMETHING TO THINK ABOUT

By Daniel Stone

LET not the timid be frightened at our announcement that this is to be a lesson in economics. Surprising as it ma seem to many, economics need not be fa tiguing and dull. In fact, there are time when it may become positively diverting

Although this economics class is de signed specifically for the benefit of Mr Louis C. Hill, President of the American Society of Civil Engineers, (we do hop somebody will see that he gets a copy o this article) we felt that some of you boys and girls might want to horn in. I is only fair, then, that we give you the complete background, so that you may start from scratch. Otherwise somebody might complain if Mr. Hill goes to the head of the class.

It appears that the Society has become mildly worried over the economic status of the engineer. In his address at the annual convention Mr. Hill discusses the question, and implies, if not actually states the fact, that engineers as a group are being underpaid. He cites, with an embarrassing lack of detail, the efforts of the Society to correct this condition, and then observes:

"However, so definite have become the demands for more effective action and more tangible results that quasi-technical organizations have been formed which have as their primary objective the improvement of the economic status of the engineer."

Is our face red? But let Mr. Hill finish with us. See how he demolishes us:

"It should be obvious that this trend toward trade unionism, if permitted to continue, will destroy whatever standing the engineer has obtained as a member of an acknowledged profession. Hence it is imperative that we consider what line of action is available other than the direct action of collective bargaining."

Then, in his solemn capacity as President of the Society, Mr. Hill gives us the solution:

"It is evident to me that the answer lies in recognition of the responsibility of each engineer to his subordinates . . . It means that most members of this Society must assume, actively and individually, the obligations of the dual function of employee-employer. Such a duty goes far beyond the administration of the work of engineers subordinate to him; it involves real concern for the working conditions of those subordinates and for the monetary and other rewards they receive for the work they do.

"With full appreciation of the altruism, ideals and ethics of our profession, we must admit that the desire for money, with the power and security that money gives, is the controlling motive of modern civilization . . . Such being the situation, it is desirable and proper that each engineer should further the interests

of every engineer subordinate to him by emphasizing to his superior or employer the importance of the engineering problem, the accuracy of execution, the responsibility, and the integrity of purpose that characterize the work of his subordinates."

Whew! We wish we could dish it out that way. The words are truly a symphony of beauty and harmony. But what do these words mean?

Paraphrased, they counsel every employer-engineer, or entrepreneur (the French put these things so succinctly!) to tell his boss, the man at the top who controls the treasury, that the boys are really a hard-working, likable lot who deserve a better break, and won't he please see to it that the checks next month are a bit more generous than they have been in the past? This is the jawbone of the ass with which our modern patriarch is to smite the menace of unionism which threatens our standing as a profession!

Suppose the boss says "No"? Suppose he says that he can afford to pay no more and that the boys will take their present salaries and like it, or else? Shall our entrepreneur answer with a quotation from Mr. Hill? The boss would probably answer, "Who the hell is Mr. Hill? And don't tell me how to run my business."

The literal-minded entrepreneur would have no alternative but to resign, and that would be a great pity, because the next entrepreneur might not be a member of the American Society of Civil Engineers, and the logic of Mr. Hill's conclusions might therefore not strike him so forcibly.

Don't think, we hasten to add, that the boss would be an old meanie if he behaved exactly as we have predicted. He would be entirely right. After all, one can't mix sentiment with business and expect to prosper. Need we cite examples?

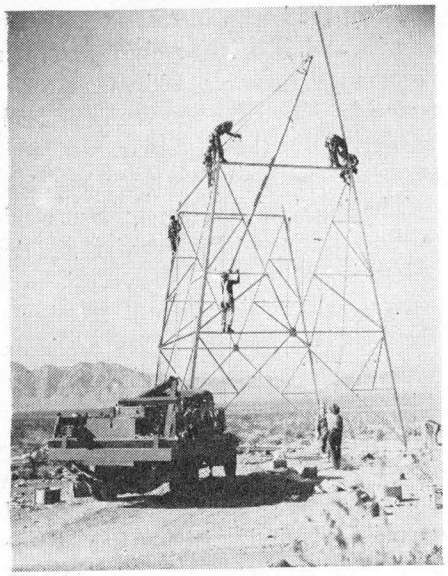
What the boss remembers and what Mr. Hill forgets is that the economic order currently prevalent in the United States is known as capitalism (despite the New Deal—may it go back to Russia!) and that capitalism operates according to certain laws which cannot be good-willed out of existence. And, since we do operate under capitalism and not in Utopia, we must bear these laws in mind when dealing with economic problems, exactly as we bear in mind the laws of equilibrium when we design a beam. There is less difference between the two than one would suppose.

One of the cardinal principles of capitalism is that wages and prices are fixed by supply and demand, through bargaining in what economists call the labor and commodity markets. Now, if Mr. Hill wants to overthrow our economic system let him come right out and say so, so that we can tell him to go back to Russia, just as we tell anyone else who goes in for that sort of agitation. Let him not be subversive about it, concealing his propaganda in subtly phrased speeches at conventions of the American Society of Civil Engineers.

Speaking for the author, at least, we cannot afford to indulge in such wild fantasies. Capitalism is what we have and we must make the best of it. And under capitalism the boss is compelled to hire us for as little as possible, in order to prevent his competitor from stealing all the contracts from under his nose. And we, of course, are compelled to eat, and so we work for what we can get. That, believe it or not, is what the economists mean by bargaining in the labor

(*Continued on page* 12)

*EDITOR'S NOTE: Mr. Hill's speech appears in condensed form in the regular feature by this title in the September, 1937, issue of *Civil Engineering*.



Courtesy of Warner Brothers

WHAT OF THE KILOWATT?

By Alexander H. Kuhnel

This is the second of a series of articles based on the report on Technological Trends and National Policy prepared by the sub-committee on technology of President Roosevelt's National Resources Committee. In this and in the articles which are to follow the writers will examine Part Three of the report, which deals with technology in various fields of national endeavor. By this means we hope to give to our readers a bird's eye-view of their industries as they stand today, an analysis of the problems facing these industries; and, through a study of recent trends, enable them perhaps to obtain a clearer estimate of the possible direction in which new developments will be most readily made and accepted. — EDITOR.

PROBABLY no other industry has produced so many technological developments which have a direct and immediate effect upon the lives of countless millions of human beings as has the electrical goods industry. Through constant and persistent research in our laboratories, multitudes of discoveries continue to appear, which serve to free mankind from cost of production of necessities to such an extent that they may be far more widely and generously distributed; which release millions of man-hours for the exploration and exploitation of new fields; which add immeasurably to the richness of the life of the average individual. Many of these discoveries present new vistas of fields still wholly unexplored, and lead again to yet other discoveries, and so on from one horizon to the next.

So broad are the applications of many discoveries in this field that one despairs of cataloguing them according to departments. A discovery such as the photo-electric cell, for example, is utilized for such varied purposes as reversing the rolls in a steel mill, sorting raisins, levelling elevators at the floors in a skyscraper, opening doors automatically and counting cattle in stock yards. In order to cover as much ground as possible in our limited space we shall divide the industry into a number of very broad classifications:

Electric Household Appliances

This field is limited very definitely by the fact that a large percentage of American homes have as yet no access to electric power. On January 1, 1936, the number of homes wired for electricity stood at 21,200,000. This leaves approximately an equal number of homes without electricity. Consequently any major electrification project which would result in the electrification of a large number of homes in any section of the country would have an immediate and salutary effect upon the electrical goods industry as a whole.

Within these present limits, however, there remains a wide field for expansion in the production of household appliances. The table below gives the estimated degree of saturation of the market for electrical appliances as of January 1, 1936:

Appliance	Percentage of wired homes using	Number of wired homes using
Cleaners	48.3	10,241,579
Clocks	41.6	8,813,500
Cookers and casseroles	6.2	1,325,500
Heaters and radiators	18.4	3,903,506
Heating pads	17.0	3,612,966
Hot plates	14.9	3,167,347
Irons	97.2	20,612,616
Ironing machines	4.9	1,031,802
Oil burners	4.6	984,995
Percolators, metal and glass	31.6	6,697,204
Ranges	6.8	1,449,250
Refrigerators	34.2	7,250,000
Toasters	49.8	10,551,283
Waffle Irons	19.7	4,167,757
Washing machines	48.8	10,346,482

From the above it can be seen that, while some appliances are already receiving pretty general application, the electric home is still rather decidedly a thing of the future. What seem to be necessary here are new developments which will materially reduce the production costs of these appliances or the discovery of methods of accomplishing their functions in a more efficient manner. This leads inevitably to that age-old discussion of the technological displacement of labor. While this is a really serious problem, which will be met again and again in this discussion of technological trends, here, at least, is one field which seems to create as many, if not more, jobs than it displaces. Figure 1 (p. 18) gives the sales of household electric refrigerators year by year from 1925 to 1934, as compared with the sales of ice-boxes during the same period. The figures show that the increased distribution of the former has almost exactly equalled the precipitous decline in sales of the latter. And, when one considers that the manufacture of an electric refrigerator requires many more man-hours than that of the ice-box, one can readily see that in this technological development the American industrial workers have gained materially in employment. This, of course, is not generally true throughout industry.

An interesting side-light on the development of electric refrigeration is the fact that the manufacture of ice has not suffered materially thereby. The total ice production for the period from 1925 to 1935 will be found also in Figure 1. It is to be expected that new commercial uses for ice will bring about a gradual increase in the demand for this product.

Illumination

This industry has traveled far since Thomas A. Edison produced the first commercially practicable incandescent lamp back in 1879. The carbon-filament lamp industry grew with the development of central power stations until, in 1906, approximately 57,000,000 such lamps were sold in the United States. These lamps produced on an average 3.4 lumens per watt at an average cost of 11.2 cents per kilowatt-hour. Rapid progress was made with the introduction of technological improvements both in the manufacture of lamps and in their design. In the year 1935, exclusive of miniature—automobile or Christmas-tree lamps, which are quite an industry in themselves—413,000,000 lamps were sold which produced on an average 13.9 lumens per watt at an average cost of 5.03 cents per kilowatt-hour.

(*Continued on page* 18)

THE Editors PAGE

DISCORD AT DENVER

"WE WILL carry the war into the enemy's country where we will win decisive battles . . . We will go out fighting our enemies as we have done in the last year." It is William Green speaking before the Denver Convention of the American Federation of Labor. Brave words. Do they indicate a renewed vigor in the AF of L? This enemy—is it the employers of underpaid labor, the corrupt officials who arm deputies against workers striking for a decent wage, the industrialists who stop at nothing to prevent their employees from exercising the rights guaranteed by the Wagner Act? Who is Bill Green's enemy?

The enemy, we read, is four million union men. Four million auto workers, steel workers, rubber workers, technicians, white-collar workers. Four million who, after years of AF of L lethargy, have organized under the one group that had the courage to really organize the unorganized.

It must be a sad thought for the millions of sincere union men in the AF of L that they were officially represented by a Convention dominated by a call for war against fellow unionists and which included on its program a speech saying that unless the Wagner Act—labor's charter of freedom—could be so amended as to split every industry into a hundred powerless groups, *"there is nothing else left to do but repeal the law."* It must have come as a shock to hear a vice-president of the labor-hating National Association of Manufacturers voice approval of these "wiser heads in the American labor movement," and offer to join with them in a campaign against the law.

As a matter of fact, there is no need to wonder how the rank and file feels. The Executive Council made it clear that they realize the widespread opposition to their position when they found it necessary to ask for and get dictatorial powers —power to step into state federations, local central labor councils, and federal unions and remove elected officials and take over funds at will. This constitutional change is an interesting commentary on Green's claim that the issue with the CIO is not industrial unionism but trade union democracy.

A HOPE FOR UNITY

IT IS fortunate that after two weeks of depressing news from Denver there came a real possibility that the split in the labor movement might be closed. The CIO leaders meeting in Atlantic City proposed a conference with the AF of L looking toward unity of the two bodies, and the AF of L, though grudgingly and apparently over Green's opposition, has agreed to attend. Unification will present many problems to the FAECT, but the need for uniting the two bodies will be clear to everyone who has the interests of labor at heart.

It is intolerable that we should have in the coming year what we have had in the past—a situation in which honest union men can be used by the AF of L leadership as tools in a fratricidal war against the CIO. We have seen San Francisco teamsters striking against the waterfront unions and against the Newspaper Guild, the threat of a general strike in Portland against the CIO lumbermen, the bakery fight in Philadelphia, and we have ourselves experienced AF of L sabotage in the Harris Steel negotiations. Sooner or later these things will be stopped; the rank and file of the AF of L will not tolerate them indefinitely.

The very existence of the CIO has already to an extent revitalized the AF of L. In the last two years that body has done more organizational work than in the twenty years preceding. When labor is reunited — eight million strong — we will be well on the way to making America a country wholly organized.

The CIO has specified that in any unification the essential principle of industrial unionism must be preserved. To compromise on this point would be to jeopardize the gains of two years in which the ranks of organized labor have been doubled. And in view of the possibility that the negotiations may come to nothing, steps have been taken toward setting up a permanent democratic organization for the CIO. But everyone must be glad that at this time the AF of L has been given, in the words of John L. Lewis—"one more chance to participate in the forging of a modern labor movement here in America, responsive to the needs and desires of the men and women who work for a living."

SHERIDAN'S ATTACK

IT WAS an unfortunate day for the engineering profession when Arthur V. Sheridan, National President of the National Society of Professional Engineers, attacked unionization of engineers and proposed that the right to organize and bargain collectively—written into the law of the land by the Wagner Act—should be denied to the technical employees.

This decision to ask for an amendment of the Wagner Act to exclude engineering employees can find no justification according to the standards and practices of the American people in the exercise of their democratic rights. If the law of the country recognizes the need for employees to have certain protection and this law is upheld by the Supreme Court, then on what basis can a professional society ask that the engineering employees be denied these same rights and be left to the tender mercies of industrialists and financial corporations? The record of these industrialists speaks for itself. The economic standards forced upon technical employees are in direct contradiction to the high technical standards of our industries.

It is regretable that a professional society should consciously or unconsciously become a mouthpiece for employer interests. Yet the fact remains that Mr. Sheridan released to the press a statement charging the CIO in general, and the FAECT in particular, with the use of coercion in organizing. When challenged, the National Convention of Professional Engineers was not able to list a single example of such coercion. We have always believed in the exact and scientific approach to any business at hand for any professional engineer and we hope that Mr. Sheridan takes up the gauntlet flung him by the Federation to discuss in open debate our "use of coercion" and to defend his position on the right of engineering employees to organization. We feel that his scientific training ought to stand Mr. Sheridan in good stead and that he ought either to bring definite facts in support of his assertion or else withdraw it entirely. The memberships of both FAECT and the Society of Professional Engineers are technical men, trained in the scientific approach, and they will, no doubt, examine his assertions as well as his position on organization minutely.

OUR NEW OFFICERS

LEWIS ALAN BERNE, National President elect, was born in New York City in 1908. His first ambition was a career in law, which he studied at New York University. Then architecture became an engrossing subject to him and he studied it at Cooper Institute of Technology and at New York University. He now has 13 years of experience behind him as draftsman, designer, chief draftsman and superintendent of construction in New York, Washington, and Chicago. He worked for several years in New York ateliers, and with such men as Morgan, Hood, Koyle, Corbett and French; practiced privately for several years. A charter member of FAECT, he became organizer of Architects Section, New York Chapter; of Washington and Chicago chapters, and later became Mid-West Regional Organizer. Ably he led the strike of Universal Oil Products men in Chicago and of Welfare Department technical men in New York. At the Second FAECT National Convention he was elected to National Executive Council and the Third National Convention enthusiastically voted him into the national presidency.

JOHN VASTA, Federal Civil Service Vice-President, was born in Italy. He finished elementary and secondary school there and at the age of fourteen arrived in New York City, where his education was resumed. His scholastic achievements are more than distinguished. He won the New York State scholarship and also New York University scholarship. In 1930 he won a third scholarship at the Massachusetts Institute of Technology, and in 1931 a Master's Degree. Since then he has been employed at the United States Model Basin where he does research work in the field of structure for the Navy, a responsible position, which gives him the official title of Assistant Mechanical Engineer. Brother Vasta has been very active in the Washington Chapter.

MARCEL SCHERER was reelected as National Organizational Director at the Third National Convention. He was born in New York City. A graduate in chemistry of City College, he became an instructor in this school. Later he entered private practice as an engineer which he left in order to organize relief committees for striking miners. His progressive stand harks back to his high school days, when he was dismissed from school for pacifism during the World War. As befits a son of a veteran trade unionist, he became a charter member of the Federation. His ample organizational ability stimulated the growth and development of the New York Chapter during his two years of office as General Organizer there. Under his leadership the prevailing wage campaign on WPA and the recent strike of 2,000 technical men in New York were successfully carried through. The Third National Convention gave him an overwhelming vote of confidence by reelecting him to the office of National Organizational Director.

ROBERT MIFFLIN SENTMAN, Executive Vice-President elect, was born in Chester, Pennsylvania, in 1901. He studied architecture at Drexel Institute, at T-Square Club Atelier in Philadelphia, and abroad. He, too, taught at the school from which he had graduated; he was instructor at Drexel for two years. Fifteen years as draftsman and designer in the offices of Day & Klauder, Schultze & Weaver, Warren & Whetmore, Walter Skinner, in the U. S. Treasury Department and the Resettlement Administration give him professional prestige. Three years of private practice add to this prestige. He was active in initiation of housing legislation in Philadelphia and Washington and cooperated in drafting of the Scott Housing Bill. As Chairman of Architects Section and Chapter of Philadelphia, he organized and led a campaign and mass picket line against layoffs on relief projects there. He has served as National President twice.

JAMES A. GAYNOR, Secretary Treasurer elect, is a holder of three degrees as a Mechanical, Mining and Civil Engineer. Three months after he graduated from school, he became Assistant Chief Executive Engineer for the United States Coal and Oil Company, and later Assistant Chief Engineer in charge of the Holden, W. Va. development. His experience includes being Engineer of Mines with the Mine LaMotte Lead and Smelting Company and Chief Erecting Engineer with the McClintic-Marshall Company and he has held many other important positions. He comes to his new office straight from the presidency of the New York Chapter. He was a major participant in the formation and setting-up of a provisional committee out of which grew the Federation. Several months after the Federation was formed he became a leading member of it. At the time of formation of the Federation, Brother Gaynor was Chairman of the United Action Committee—a committee formed to combat want and unemployment in New York's white-collar and professional working-classes. He has been president and leading force in the Association of Educational Workers—the predecessor of Local 453, the present WPA teachers' organization. At the present time he is the Regional Administrator of Adult Education in New York.

BORICE Z. BORIS was elected Pacific Coast Regional Vice-President. Brother Boris has a colorful history behind him, though we've been able to elicit only the briefest of outlines of it from him. He was born in Harbin, Manchukuo. An engineer, he was educated at California Institute of Technology and did graduate work at the University of California. For eight years he has done engineering work in various industries on the Pacific Coast. He was a charter member, and is extremely active in the Los Angeles Chapter.

The Book-Cadillac Hotel at Detroit where Convention was Held

THIRD NATIONAL CONVENTION

By Marcel Scherer

TECHNOLOGICAL progress and its significance to the men and women engaged in the technical professions marked the keynote of the Third Annual Convention of our Federation. It was altogether fitting that Detroit, seat of modern industry in its most highly developed form and scene of labor's most aggressive and successful campaign in recent years to obtain a more equitable share in the bounty made possible by technological progress, should be the city chosen for this historic meeting.

Here the delegates from all parts of the United States, representing men and women in all of the different branches of technology who have through their labor and inventive genius given us the wonders of this modern age, met to review the progress of their organization over the past four years, to consider how best to meet the problems arising out of their quest for economic security and to fashion the Federation into a more effective tool for the achievement of that goal.

The Convention which met this year in Detroit was vastly different from the body which met in Rochester, N. Y., in 1936. Many of the faces present were the same, it is true; but there were also many new faces, representing industrial and professional groups which were not with us a year ago. While at Rochester major stress had been laid upon organization in WPA, the year just passed saw a shift and expansion of our membership which necessitated stressing organization in private industry, Civil Service and WPA, in that order, at Detroit.

CIO affiliation had been accomplished during the year. This step had been taken with the recognition of the fact that genuine and lasting progress toward the achievement of our goal of economic security could be attained by us only through the channels of the American labor movement and as an integral part of it. At the Convention the vital necessity of our unity with the forces of organized labor, through the CIO, was stressed by speaker after speaker.

Representatives of organized labor pointed out the value of our organization to the labor movement and the possibilities for progress inherent in this unification of the technical forces with the workers in the shops. This was brought out by John L. Lewis in his message to the Convention and by fraternal delegates attending as representatives of many of the principal CIO unions.

Reports of progress by the delegates from all sections of the country did much to hearten and enliven the Convention. As a result of the organizational drive recently launched with the aid of funds advanced by the CIO, it was reported that there were now 15 full-time organizers in the field, as compared with 2 or 3 of a year ago. It was reported that 5 new chapters have been chartered since August of this year, making now a total of 17. Of these 5, 3 locals of the IFTEADU, the AF of L technical union, had withdrawn from that body and become affiliated with us.

As to concrete gains made for the Federation members, it developed that contracts had been signed with private employers involving some 1,000 employees and gaining monthly increases totaling $52,600, together with a reduction in hours and granting of paid vacations. In partially organized offices pay increases totaling $65,000 were gained for some 3,000 employees. Gains in Civil Service included salary restorations, totaling $500,000; protection of seniority rights and restoration to active service of over 1,000 technical employees, with total salaries of over $2,000,000 annually; successful campaigns for back salaries accruing to 150 men, totaling $150,000; promotion rights for some 500 employees at salary increases ranging from $700 to $900 per annum.

In considering the organizational problems raised by many delegates, the Convention turned to an examination of our national constitution with a view to making such amendments as would enable us to proceed more effectively. Among the changes adopted is an amendment which gives locals chartered by the chapters more prominence. With the plant and laboratory as our main organizational nuclei, it was felt that such locals should receive more encouragement and freedom. A local that has a contract with an employer or a local with 25 members, or more, which has a majority in its employment unit signed up may now be directly represented at conventions by elected delegates. Industrial locals, including all the employees in an office or plant where a majority of these are technical employees, are now provided for and are placed in much the same category.

The chapters, it was reported, are devoting much attention to the setting up of locals. The present trend indicates that the chapter will become essentially the coordinating body for the locals under its jurisdiction rather than a heterogeneous group of individuals scattered in many different technical fields.

Provision has also been made to permit more than one chapter in a locality. This was found necessary in New York City, where the Civil Service Chapter had applied for a separate charter. Members in Civil Service have problems which have a definite tie-up with legislative action and adjustment of grievances through the action of elected officials. Their program and action must of necessity be different from that of Federation members in private industry. They must be free frequently to unite forces with other Civil Service groups to obtain necessary adjustments. Hence a separate chapter was deemed desirable. Other occasions may arise when, for other reasons, separate chapters may become necessary. A second chapter in a locality is now permissible, provided it has a minimum of 25 members. The National Executive Council

must make the final decision for granting such a charter, after consultation with a board upon which each chapter in the region is represented.

Other constitutional changes provide for a more effective National Executive Council, with representation by regions and a total membership of 15. A separate Federal Civil Service Division, under the direction of a national vice-president, was established.

A minimum of $1.00 per month was fixed for dues. It was also provided that a portion of the initiation fee go to the National Office to aid in defraying the cost of field organizers.

Political Action

As an affiliate of the CIO, we have already seen the wisdom of action in the political as well as in the economic field. The experience of the CIO has here been in sharp contrast to the tradition of the AF of L, summed up in its slogan—"Reward your friends, punish your enemies." Labor gained little under this policy and was able to hold none of the gains. Hence the recognition on the part of the CIO that positive action in the political field on the part of organized labor is essential to the success of its economic program.

The National Constitution of the Federation was revised at Detroit to permit a chapter to support a labor party or labor candidates for public office. When a chapter contemplates such action, however, it must obtain the approval of the National Executive Council. In political campaigns such as those being currently waged in Detroit and in New York City, where issues of fundamental importance to labor and of special importance to technical people are at stake, we shall now be able to act side by side with all other labor organizations. We can now become an active force in the shaping of labor's political program.

One of the pressing problems discussed at the Convention was our relationship with other unions. The effectiveness of our field organizers could be greatly strengthened, it was reported, by greater and more direct cooperation with other CIO unions in the field. Often it developed that these unions, organized on industrial basis, were not clear as to our relative jurisdictions. It was reported at the Convention that the CIO Conference at Atlantic City planned to clarify the relationship between the industrial unions and us. The three ranking officers of the Federation were delegated by the Convention to attend this conference.

Concentration in Key Industries

The emphatic requests from the chapters for the retention of their organizers attested to the effectiveness of our present personnel in the field. The Convention decided, however, that concentration in such key industries as steel and radio seemed advisable at the moment, and that the organizers would have to devote special attention to these fields. The National Executive Council was empowered to revise the plan of organization whenever this seemed warranted.

The continuous attacks leveled at the Federation by the professional societies were answered in an excellent report by Brother Scherer. He pointed out that at least 90 percent of the members of the societies are in the employee category, and hence have problems identified with our own. These have been given little or no attention by the societies, whose attacks on the Federation have been entirely destructive in nature. The Convention approved a proposal to prepare and distribute among society members a series of five leaflets in which the economic problems of the technical employee and the necessity for unionization, together with our own program, would be made clear.

Our Convention was host to delegates from a number of independent technical organizations. Chief among these was the Society of Designing Engineers, whose membership is in excess of 2,000, principally in the automotive industry. A majority of the members of this organization, which failed by a narrow margin of the two-thirds necessary to make the decision effective, had already voted for affiliation with our Federation. These plans were furthered through conferences at the Convention.

A highlight of the Convention was the appearance of 6 delegates from the Pittsburgh local of the IFTEADU, who announced that by a 90 percent vote of their members the local had withdrawn its AF of L affiliation and now requested a Federation Charter. The representative of the powerful Minneapolis local of the IFTEADU, numbering 1,200 members, reported that his local prepared to hold a referendum on affiliation with us.

A legislative program proposed and endorsed by the Convention on Federal Civil Service contained the following—a 35-hour week, mandatory automatic annual salary increases, higher minimum salaries, retirement regardless of age after 30 years service, and a court of appeals for Civil Service employees. The Convention also accepted the report of the New York Chapter on WPA which stated that "WPA or some superior work relief mechanism must continue, both as a job reserve and also to help maintain prevailing wages in industry."

The resolutions adopted by the Convention were of decidedly progressive nature. They called for the elimination of all legislation detrimental to labor, for the abolition of all terroristic, anti-union activity, and for the support of the Lafollette Civil Liberties Committee for the carrying on of its valuable work.

Resolutions protesting discrimination against Negroes and women in the technical profession were adopted; also resolutions calling for increased public works, housing, social security, and support of the American Youth Act. In addition, there were resolutions calling for a revision of the patent laws, abolition of the cadet system for engineers, and a study of licensing laws.

Our Status

The discussions upon the more general question confronting the technical profession brought a realization of the fact that we are coming, as a group, to appraise more clearly our status in the present day world. This was reflected in the speeches of Dr. Polakov, Frank Lloyd Wright and others; also in the carefully thought out report of National Secretary, Jules Korchien. Essentially this discussion revolved around the fact that, as industry develops, our position approaches ever more nearly that of the industrial worker. Standardization and the division of work are reaching the professions, just as they long ago reached the manual worker. And, as in the case of the manual worker when he evolved out of the individual craftsman of the handicraft era, it has raised havoc with our economic standards.

We see but one solution. That solution is the building of our union to the point where it can serve to set uniform standards of our members in all industries; standards that will bring us a just share in the bounty which our labor makes possible. This can be accomplished only if we take our place—and it can be, if we make it so, an exalted place—alongside the other unions of American labor.

PITTSBURGH PREFERS CIO

Max Aber Tells Why Pittsburgh Chapter Left AF of L to Rejoin Federation

RECENT members of the FAECT will be interested to learn that Pittsburgh was one of the Charter Chapters of the Federation. The question may then arise—why did the Pittsburgh Chapter leave the FAECT, to join the IFTEADU and then come back into the fold? We will attempt to answer this question very briefly.

The IFTEADU National Convention in September, 1936, voted to affiliate the FAECT to their international without discrimination against any individual chapter. The Pittsburgh Chapter was then notified by the National Office of the FAECT to begin an intensive membership campaign on the strength of this affiliation. Within two months we were successful in recruiting more than 150 new members.

A special executive conference of the FAECT, called early in January, finally resolved to discontinue negotiation with the AF of L, since they had broken their convention pledge to affiliate our national body. Our representatives to this conference came instructed by the membership to get permission for our local to apply for an AF of L charter. Since it was impossible to present a clear and decisive picture of the Pittsburgh situation in the short time at hand, the executive session denied our request. We in Pittsburgh were faced with a peculiar situation. To remain in the FAECT meant a wide open split in our organization. Our new members who were recruited on the basis of AF of L affiliation refused to pay dues, pending our concluding negotiations for such affiliation. The danger of having two rival unions in this industrial area presented itself. Upon our return from the conference, the membership through a referendum voted to affiliate to the AF of L and to continue our friendly and cooperative relations with the FAECT.

Affiliation with the AF of L took place in February, 1937. Our membership was doubled within six months. Civil Service employees in municipal employ made up a great majority of the new membership. Private industry lagged behind in our membership drive. This was a sore spot, especially in the face of the splendid organization work taking place in the steel industry through the CIO.

The CIO came to Pittsburgh and took the city by storm. In fact, the CIO put labor on the map in Pittsburgh. Our approach to technical men in the steel mills was met with stiff resistance. These men wanted a CIO union only. Credentials given us by the local CIO leaders impressed these men, but failed to get them to sign an AF of L union application card.

The Private Industry Division pointed out that we were throttling organization in private industry by remaining in the AF of L. A poll taken by this division was 99 percent in favor of the CIO. We were then faced with the problem of the sentiment of our Civil Service Division.

The 20th Annual Convention of the IFTEADU proved the turning point regarding CIO affiliation for our complete membership. At a large meeting of our local following this convention, the membership voted unanimously to take a referendum on CIO affiliation. Feeling and spirit ran high that evening. CIO was the order of the day. Following this record vote, Brother Berne addressed the membership on the meaning of FAECT affiliation.

The result is a matter of record now. A referendum on CIO affiliation brought in a 95 percent affirmative vote. By the time this goes to press we will be formally installed as a local of the FAECT. Six fraternal delegates attended the Third Annual Convention of the FAECT. The reports brought back by our delegates gave a glowing account of the proceedings as compared with the listless convention of the IFTEADU.

During our short stay in the AF of L, the international office did absolutely nothing to help us organize the technical men in this area. It was only through the efforts of the local members that we were able to keep the men together, as well as to continue a successful drive for membership. Through the FAECT we intend to strengthen our membership in Bethlehem Steel, Jones & Laughlin, Carnegie-Illinois, American Bridge, Westinghouse, etc. While we already have a majority of the municipal technical employees enrolled in the Federation, our prospects for enrolling the remainder of these men, together with those in the county and state, seem very bright.

A PROGRESSIVE STEP

FOLLOWING the recent referendum vote of the SDE, which showed a majority of the members for affiliation with the FAECT, a joint meeting was held in Detroit of the executive officers of the SDE and the FAECT.

This conference recognized the need for effecting unification and for a thoroughgoing drive to organize other technical employees in the automotive and allied industries.

A series of proposals were agreed upon, whereby the membership of the SDE would be given an opportunity of hearing speakers of the FAECT and the industrial union UAWA, and learn of the need and value of cooperation.

At the Atlantic City Conference a meeting was held with Homer Martin, President, Richard Frankensteen and other executive officers of the UAWA in order to enlist their support for this drive and to utilize their splendid, powerful organization to help in organizing the technical employees who are yet unorganized.

In addition, there are some technical employees who have joined the UAW and they will be drawn in to effect complete unity of all technical employees in the automotive industry, into the FAECT.

Such a program represents an important progressive step for the SDE. It will not only bring about unification, but will also result in doubling the membership, heretofore unorganized in the automotive industry which will add great strength to the numbers already organized.

*SOMETHING TO THINK ABOUT

(*Continued from page* 5)

market. It sounds more genteel that way.

When we bargain individually we have no alternative when the boss says "or else". Don't forget that capitalism compels him to do this! Personally he may be a fine fellow. And the well-meaning entrepreneur has no alternative when the boss says "or else", because it is an unfortunate fact that he, too, must eat.

Believe us, Mr. Hill and Fellows of the Society, we too have considered this problem quite carefully. But since we don't propose to overthrow capitalism, (bombs are so undignified, especially for professional men) we have had to try to find a solution that is quite legitimate within the existing economic order. We tried to be original, too, but the only method we were able to find by the use of which we might deal adequately with the problem is one which we borrowed from the capitalists. It is "the direct action of collective bargaining". The capitalists found out long ago that it was better for them all to agree on one price —for steel or cement, to cite examples— and all make a "reasonable" profit than it was for each to cut the others' prices until they all went bankrupt. Of course they had used the latter method for years before they stumbled upon this elementary solution.

Since this sounds like common sense and nothing more, we are trying it out. The proposal is that we get together in our Federation and bargain collectively for our salaries. Then, when the boss says "or else", we say "or else you don't get the job done".

But what of professional standards? Well, we have always felt that gentlemen with holes in the seats of their trousers detracted considerably from the dignity of their profession. To impress the public we ought to put up something of a front—or should we say behind? A well-dressed society membership that managed to pay its dues regularly, and purchase the pins and subscriptions to *Civil Engineering* would help the profession to avail itself of modern advertising and publicity technique to the end that the public would really be impressed, if not dazzled, by our status as a profession.

But, of course, economics is not for engineers. We like to face hard facts when we see them. None of this Utopian theorizing for us.

MEN OF "MAGIC"

By Philip Salaf

PERHAPS no one industrial corporation has contributed so much to the technical advancement of the country as General Electric. It has been for many years the pioneer in the field of electric power generation equipment. The fame of the "House of Magic" at Schenectady has gone to the four corners of the earth. The GE design and manufacture of transformers, switchgear and other power auxiliaries, motors, generators and the thousand and one other items of electrical apparatus are definite proofs of the high standards to which our American industrial technique has advanced.

Many engineers and students, lost in the purely technical and scientific developments of GE, have not been in a position to view the economic condition of the technical men who have made these things possible. Are the boys who plug away over their boards and juggle their "slip-sticks" properly rewarded for their contributions? The answer unfortunately is no.

Let us examine closely some of the economic conditions under which the GE technical men work. The breaking down of design and drafting into routine functions is developing continually. This makes for the easy replacement of the older, more experienced men by younger, lower-paid men. Although this has been denied, the fact remains that after the periodic lay-offs the higher-paid men are not rehired. Preference is always given to the lower-paid men. The current Wall Street rumblings again raise the question of shuffling the personnel. Thousands of young, well-trained and eager technical college graduates, willing to work for "The" GE at very modest compensation have been brought in and, unless organized into the FAECT, can do untold harm to the wage structure in the profession by pushing the older man out of the picture.

Shop workers receive lump sum bonuses for any ideas the company uses. These run as high as $100. Technical men receive nothing for their inventions, except vague promises of future advancement. Mr. Good, works manager at Philadelphia, told the writer that the company pays technical men for the use of their brains. Under the present arrangements the draftsman must present his ideas to his superior—who generally takes the credit for them. The FAECT program of revising the present copyright and patent laws to spike "yellow dog" contracts meets ready response from the men.

The current system of wage adjustments to conform with changes in living costs is only an extremely clever scheme whose exact workings remain unclear to most GE workers. The company uses this and similar bonus schemes to create the impression that it is sharing its profits with the employees. The company today reports orders for the first nine months of 1937 as 44 percent over the first nine months of 1936. We can rest assured that the stockholders would not permit a 44 or even a 22 percent wage increase. Heavens, no!

The FAECT has brought its program to GE technical men and they are slowly but surely grasping its full meaning. They have seen the phenomenal growth of the United Electrical, Radio and Machine Workers of America, who under the CIO banner organized strong locals and negotiated signed agreements at a majority of the larger GE plants. They have seen the benefits of organization for the shop workers—the machinists, sheet metal workers, patternmakers, etc.—all joined together in their industrial unions. The pending national agreement between the UERMWA and the GE management will crown the efforts of those courageous fighters who were convinced that industrial democracy can and must be won at GE.

The decision of our Third National Convention to concentrate our organizational efforts in steel and the electrical manufacturing industry will do a great deal toward determining higher standards not only at GE, Westinghouse, etc., but at all large companies employing technical men.

FEDERATION ACTIVITIES

By Marcel Scherer
Federation Organizational Director

IN A letter to the newly appointed Administrator of Federal Housing Authority, Mr. Nathan Straus, the National Office of FAECT pointed out the role of the Federation in the fight for low rental housing, its introduction of the Scott Bill and later its backing of the Wagner-Steagall Bill.

The Federation proposed that a meeting be arranged between our Federal Civil Service legal representative and Mr. Straus for the consideration of the question of proper prevailing rates of pay for technical men in housing authorities.

New York

The FAECT has entered into negotiations with the Trubernizing Process Corporation, at 350 Fifth Avenue, with the aim of signing a union contract to cover the firm's laboratory staff. Preliminary discussions indicated that no major obstacles stood in the way of establishing contractual relations. The firm's president has already said that he is willing to reduce the 41½-hour, 5½ day, week to a 5-day week of 37½ hours. Negotiations are being carried through without delay.

Brooklyn Navy Yard reports that members are enthusiastic about the FAECT Federal Civil Service program.

New Jersey

The technical staff of the United States Testing Company of Hoboken, recently organized solidly into the FAECT, has taken steps to negotiate an agreeement with the firm. On first being approached by the Union organizers and a negotiating committee of five, elected by the men, the head of the firm refused to commit himself to a date for negotiations, or to talk to the representatives of the Union. When faced by the solid determination of the men, he yielded and agreed to confer two days later. The demands as presented are, in brief:

A flat 35 percent increase all down the line. Thirty-five hour week. Time-and-a-half for overtime.

A starting wage for non-experienced graduates of $25, with provision for rapid promotion and increases.

Two weeks notice before dismissal, together with a dismissal wage of two weeks pay for junior, and four weeks for senior men. The Union reserves the right to question all dismissals for cause.

A 100 percent closed shop. New employees may be given a try-out of four weeks before being required to join the Union.

Recognition of the Grievance Committee. Provision for arbitration of disputes. No punitive transfers or demotions with or without reduction in pay.

Sick leave with pay. Twelve legal holidays with pay. Two weeks paid vacation.

The above applies to the employees of the Chemical, Dye, Physical Testing, Microscopy, Tint Research and the Research and Development Departments.

The United States Testing Company has branches in New York, Chicago, Philadelphia, Greensboro and Woonsocket. It also furnishes experts and equipment for store laboratories, advertising the rates of these experts at $75 a week.

Pacific Coast

Signing up is going on at a fast pace on the Pacific Coast. A Los Angeles Steel Local has been set up at the largest steel plant in this city, to which several members have been transferred from the SWOC. Another local has been set up for the laboratory-technicians, and a local in aircraft is soon to be established.

In San Francisco a new chapter has been organized through the help of the Interprofessional Association. This group will concentrate in structural steel. The East Bay Chapter is increasing in strength and numbers in oil plants.

Philadelphia

Philadelphia Westinghouse asks to be chartered as a chapter before January 1st. The campaign there is being carried on with the cooperation of Local 107 of UERMWA. One thousand special leaflets are being distributed and a special meeting will be held at which Professor Jesse Holmes of Swarthmore College will be guest speaker.

A vigorous drive is being carried on at Westinghouse in East Pittsburgh simultaneously with the Philadelphia drive. National Organizational Director Scherer has met this group to consider chartering it as a new chapter and extending the drive.

Illinois

The International Harvester Company (tractor works) has been organized into a plant local, following the CIO Conference at Atlantic City. The SWOC at International Harvester voted unanimously to transfer to the FAECT 15 technical employees who were members in the industrial union—to serve as a base for the organization of the whole plant. The International Harvester plants at East Moline and Davenport are clamoring for organization. Organizer Kornaker will visit these plants in order to set up locals there.

Washington

The Federation is concentrating on three departments, with potential FAECT membership of 1,000 men. A new local has been set up in the Navy Department, which is doing well and growing fast. The Procurement Local has been revived and is showing a large gain in membership. And finally a drive has been begun to organize the local Navy Yard a 100 percent.

A legislative program for Federal Civil Service has been adopted jointly with the Brooklyn Navy Yard Chapter which includes—a demand for a 35-hour week; revision of salary schedule, with a yearly minimum of $1,800; steps for automatic annual increases in salary; and retirement after 30 years of service, regardless of age.

Boston

The agreement we signed with the Gero Products Co. is a definite victory. It includes—

Forty-hour week (5 days) for eight months per year (the slack season), 44-hour week four months. Time and a half for overtime; double time for Sundays and holidays. Closed shop. Seniority rights in layoffs and rehiring. Increases averaging more than 20 percent in wages, with the opportunity to earn bonuses above the minimum wages established. Full union recognition, with the right of the union representative to walk into the plant whenever he sees fit.

CIO CONFERENCE

PROGRESS was the keynote of the Atlantic City CIO Conference. The CIO has become in the past year the representative of the majority of organized labor. Progress was shown also in its realization that in the fight against reaction it had to have political allies.

This realization grew from the sorry spectacle presented by the last session of Congress; its capitulation—lock, stock, and barrel—to the reactionary Liberty League forces. The defeat of Roosevelt's proposals for unpacking the Supreme Court, of the anemic wages and hours bill, of the anti-lynching- bill, of farm legislation and every other progressive measure was accomplished by the unity of the reactionaries and the disunity of the progressives. This proved clearly the need for a common program on which all progressives could unite.

The CIO Conference has given our country such a program. It is based on the premise that "each worker has a right to a job and must be granted security of employment." The program proposes:

1. The licensing of business enterprises engaged in inter-state commerce to compel employers to respect the rights of labor.
2. Wage and hour legislation to increase and stabilize employment.
3. Continuation of WPA and PWA; the granting of jobs to all those in need of work.
4. Amendments to the Social Security Act to extend its operations and increase its benefits.

A further step toward unity of the forces opposed to reaction was the action taken toward forming an alliance with the farmers.

The following resolution on the Wagner-Steagall Housing Bill was introduced by the Federation and was unanimously passed:

"Whereas the CIO has actively supported Federal legislation to provide decent housing facilities for families of low incomes— As passed by Congress, the Wagner-Steagall Act depends for its successful operation upon state legislation creating local housing authorities and empowering them to utilize the favorable credit provided by the laws.

"Now, therefore, be it resolved that the CIO unions should continue their efforts to secure the establishment of such housing authorities and the practical realization of the benefits of the act."

Other important resolutions were adopted. They include: Improved working conditions for government employees; condemnation of local and state authorities for anti-union action during the steel strike; boycott of Japanese goods; condemnation of the anti-labor policies of the Federal Communications Commission, and continuation of the Lafollette Civil Liberties investigation.

The Conference called for a Federal investigation of vigilante groups; support for the Wagner-Steagall housing act; support for the Federal anti-lynching bill; condemnation of the Chicago steel massacre and the calling of a CIO convention.

The representatives of the Federation who attended the Conference were able to report significant gains in the organization of technicians. National President Lewis Berne's speech outlined the problems of the union and announced its growth to 6,000 members. He stated:

"We can already report a growth of 1,000 members. We have also extended our organization from 12 cities in August, to 17 at present. Three locals of the AF of L International of technical men have affiliated with us. An independent group, the Society of Designing Engineers, which is organized in the auto industry, recently completed a referendum with a majority vote in favor of affiliation with the FAECT. Unfortunately, this fell short of the required two-thirds vote. This society has 2,000 members, who, we expect, will become part of our organization within the next two months.

"The AF of L engineers' union held its convention about four weeks ago. Here we saw an organized, progressive bloc which represents a majority of the members and which is committed to a program of support to the CIO. Although this majority was defeated at the convention, because of unfair representation, we are continuing to work jointly and expect that they will soon join our union. This will account for over 1,000 members.

"While our membership is comparatively small, we have already been able to organize groups in important industrial plants. (The report gives a list of twenty-five of the industrial giants of America. —EDITOR). In addition we have groups organized in some 200 large manufacturing plants. We have succeeded in getting contracts for some 1,000 workers with monthly increases of $52,600, plus shorter hours, plus vacations with pay. An additional 3,000 workers in partially organized offices have already won increases totaling $65,000 monthly.

"Our union is also instituted in Civil Service. Here our activities have brought the following, particularly in New York City:

1. Successful campaign in conjunction with other unions in salary restitutions totaling $500,000 for engineers alone.
2. Successfully passed legislation protecting rights of technical men and making possible the return to active service of over 1,000 technicians; total salary benefits exceeding two million dollars per year.
3. Effected payment of back salaries of 150 men, totaling $150,000.
4. Obtained promotion rights for approximately 500 men at salary increases of $700 to $900 per year.

5. Liberalized pension system through legislation, increasing retirement pay.
6. Succeeded in killing every measure detrimental to Civil Service.
7. In conjunction with the State, County and Municipal Workers of America are prosecuting a campaign for a five-day week law.

To digress from President-elect Berne's report for a moment, it should be noted that a resolution was adopted which states in part—

"That the Committee for Industrial Organization advocate and support legislation establishing a five-day week for government employees and a minimum annual wage adequate to assure a decent standard of living.

"That the Committee for Industrial Organization recommend the adoption of legislation democratizing the relationship between workers and administrators in government service, by creating fair and impartial machinery for dealing with disputes, including independent boards of appeals for the adjustment of all employment problems.

"That the Committee for Industrial Organization favor the extension of the Civil Service to the end that government employees may enjoy security of employment and the selections to government positions may be made on a non-political basis of merit."

Conferences of Federation representatives were held with Murray of the Steel Workers Organization Committee, President Martin of the United Auto Workers, Carey of the United Electrical, Radio and Machine Workers, Merrill of the United Office and Professional Workers, and others, to map joint work. A plan to bridge the gap between the industrial unions and the Federation was worked out. Direct help in the organization of the technicians was pledged.

An important development at the Conference was the step taken to unify the CIO and AF of L. The news that the AF of L leadership had finally agreed to meet with the CIO to discuss unity brought joy to everyone interested in the well-being of those who work.

In his concluding speech John L. Lewis observed that "This meeting marks a milestone in the progress of the Committee for Industrial Organization in the great task of creating here in our country a modernized labor movement."

CAN LABOR GET TOGETHER?

"You may be assured," John L. Lewis, discussing unity with the AF of L, states, "that in the conference that may or may not eventuate with the AF of L, your representatives will do nothing that will in any way circumscribe or limit the influence or trend of our movement; or in any way contribute toward a lessening of the effect of our mutual enterprises; or to cause any member back in his home locality to think for a moment that there is going to be any lessening of this work of organization here in America."

Committees have since been appointed by the CIO and the AF of L to confer and a place has been set for their meeting. The results of this conference are at this writing unknown. However, one thing is clear; the AF of L craft system is obsolete. A new unionism has made its appearance on the scene, one that is in tune with our great mass production.

The features of this new unionism developed by the CIO are—well-integrated organization committees geared to unionize millions; the establishment of industrial unionism in the mass-production industries; the initiation of industrial federations in those industries where craft unionism is strong; the establishment of a centralized trade-union movement in which the national leadership has sufficient authority and resources to be able to support the individual unions in their campaigns; the democratization of the trade unions from top to bottom, with equal rights for Negroes, women and youth; the development of a younger and more progressive leadership; use of more modern strategy and tactics, including better organizing methods; and the active participation of the trade unions as independent political forces. These are the basic features of the new trade-unionism. Bearing this in mind, it is evident that the unity proposals being discussed in AF of L circles cannot be the basis of truly unifying the trade union movement.

The first AF of L proposal is continuation of the no-compromise craft union policy of the AF of L Executive Council. By this method the CIO must simply give its membership over to the craft unions. This would nullify every progressive gain made by the CIO.

The second proposal, that proposed by Major Berry of the Printing Pressmen's Union, is to make the CIO Industrial unions a mass production department of the AF of L. By this proposal, the CIO principle—modern industrial unionism—instead of becoming the backbone of a revitalized AF of L would become an insignificant appendage to the antiquated craft unionism.

The third proposal, as put forth by the International Typographical Union, is to amend the AFofL Constitution to permit the affiliation of both craft and industrial unions. While this is a step in the right direction, it fails to solve the fundamental craft drawbacks of jurisdiction, representation of the industrial and craft unions, etc.

No unity can be accomplished which will satisfy completely the desires of the CIO and the AF of L. However, a minimum program can be drawn up which both can accept. The basis for this must be organization of the unorganized and the recognition of the industrial union principle in mass production industries.

Lewis, in his closing remarks to the CIO Conference points out—"If the AF of L chooses to lay aside its prejudices and join the CIO in working out a program of unity 'tis well. If they elect not to do so, the responsibility for that decision will be upon their own shoulders. But the CIO will go on and it will go on working out its own destiny; and its destiny is to make true some of the dreams of its millions of members."

CIO Accomplishments

Over 30,000 contracts covering over 3,200,000 workers.
2,100,000 workers covered by contracts giving CIO sole bargaining rights.
1,500,000 workers covered by closed shop contracts.
2,000,000 people work shorter hours.
1,000.000 get vacations with pay.
1,500,000 get time and a half or double time for overtime.
1,000.000 workers won seniority rights.
900,000 get four holidays a year with pay.
500,000 have had the terrific speed-up in their plants curtailed.
900,000 workers' safety and health are guarded by contract.
1,250.000 workers are covered by new CIO contracts, assuring greater job security, forbidding summary dismissals and various forms of managerial abuse.
$1,000,000,000 yearly wage increases.

AUXILIARY AFFAIRS

THE First National Convention of FAECT resolved that Women's Auxiliaries be established in all chapters. Five have come into existence since that time—in New York, Washington, Boston, Chicago and Los Angeles. Several wives and friends of members of the Washington Chapter became the prime movers in carrying out this resolution.

In a short time the Women's Auxiliary of Washington found itself involved in many issues and campaigns of the Federation, besides carrying on an independent social and educational program for its members. When the Procurement Division dismissed 500 architects and engineers, the women did not sit back and just take it. They served on delegations. They offered their services to keep headquarters open for the duration of the fight. They helped with such technical details as getting out leaflets. The campaign to reinstate Robert Y. Durand, dismissed for union activity, was the campaign of the members of the Women's Auxiliary. Not only did they help in the distribution of leaflets, take turns on the picket line and serve on delegations to visit various officials and congressmen, but also ran parties and affairs to raise funds to carry on. After a tireless campaign of a little more than a year, Robert Durand was reinstated. In addition to these activities, they, with other trade unions and women's organizations, took action on legislative measures.

They actively supported the campaign for the repeal of Section 213 of the Economy Act which directly affected employment of husband and/or wife in the Federal Government. This clause was repealed in the last session of Congress, making it possible for both husband and wife to be employed at the same time.

When the Works Progress Administration in New York decided to hand out its famous "pink slips" and technical men went out on strike to protest these dismissals, the Women's Auxiliary immediately went about the task of involving the wives and friends of these men in this campaign. They formed a delegation to visit the Mayor to voice their protest. They set up a kitchen to help feed the men and took turns on the picket line.

The Women's Auxiliary of Chicago barely had time to show signs of dispensable part of a powerful FAECT. life when the Universal Oil Products Company's engineers, chemists and plant workers went on strike to win higher wages, better working conditions and union recognition. The women of Riverside became famous during and after the period of the strike for their militancy on the picket line. In groups they visited the homes of the men who went through the picket lines. They let it be known that, as wives of union members, they too would take action to stop them. They held a party for the strikers, their families and friends. Together with Federation members they wrote songs to help keep up the fighting spirit.

Boston and Los Angeles Auxiliaries are recent additions and have for the most part functioned as social groups. Boston was particularly successful in its efforts to raise funds. As was pointed out by Brother Jacoby at the Third National Conention, this accumalated wealth aided immeasurably in getting the organizational campaings of the chapter under way.

At the Third National Convention in Detroit all Auxiliary reports dealt with their plans for future work—a great deal of which will lie in educational and social activity. Organized classes on such subjects as child psychology, trade unions problems in their relation to women, courses in arts and crafts, are features of their program.

Mrs. Goldman of the AWU Women's Auxiliary gave a very inspiring report of this organization, which numbers 15,000 members in 33 locals throughout the country.

The representatives of the SDE Auxiliary and the DELA's are interested in working together with other auxiliaries on such issues as the Women's Charter, Peace, and the campaign against the high cost of living—all issues on which the FAECT Auxiliaries have already been very active.

The report of the Auxiliary session was received favorably on the floor of the Convention proper. The delegates voted for close cooperation between the Women's Auxiliary and the National Office of the Federation, calling for a conference in the near future. With the exchange of experiences at this session as a guide for future activity, the Women's Auxiliary is confident that it will grow to be a strong and in-

BAUM SCORES FIRST HOMER

THE agreement reached between the Federation and the Pfaudler Company of Rochester, N. Y., in the case of Svend Plum and Arthur Wagner, Federation members, was the first union victory for Rochester technical men.

Following the dismissal of Plum and Wagner, Organizer Baum lost no time in taking up cudgels in their behalf. A conference was arranged between the president and the plant superintendent of the company and Organizer Baum, Plum and Wagner, and a representative of the National Labor Relations Board. The Federation charged unfair firing for union activity and demanded reinstatement and back pay.

Pfaudler Company agreed to pay the men their back pay—a sum amounting to nearly $1,000—though it denied that they had been discharged because of union activity. It was further agreed that preference is to be given to these Federationists when men are employed on new building operations.

The Federation asked that a notice to that effect be posted on the Pfaudler Company's bulletin board. The statement below is a reprint of this notice—

There has been some question involving the discharge on July 26th, 1937 of Svend Plum, Arthur Wagner and Walter Pioch, at the time that the Architectural Department of The Pfaudler Co. was dispensed with. The company wishes to state that these men were not discharged for their union activities.

The company will in no way interfere with the rights of its employees to join a union of their own choosing, or to engage in union activities.

In order that there should be no misunderstanding in this case, the company has agreed to pay to the above workers, the pay they would have earned if they had continued working for the company until the present date, minus anything they may have earned in the meantime.

The company has also agreed that as soon as building operations are commenced on the old buildings of the company, these men will be given preferential consideration and re-employed by the company as the work necessitates.

The adjustment of this case has been reached on the most amicable basis to all parties concerned, through the offices and assistance of the National Labor Relations Board.

President.
THE PFAUDLER CO.

A PAGE OF Reviews

40,000 AGAINST THE ARCTIC
By H. P. Smolka

William Morrow & Co., New York, 308 *pages.* $3.50.

IN 1935 H. P. Smolka, correspondent for the London *Times,* was invited to a tea in London. Out of that invitation grew this book, for it was then that Smolka met Professor Otto Schmidt, Chairman of the Soviet Government's Northern Sea Route Administration.

Schmidt spoke of the Arctic, says Smolka, as Rhodes might have spoken of South Africa or an eighteenth century pioneer, of America. He spoke with pride of the present and of the promise of the future: "We are building towns and ports in the Polar regions, factories, mines, vegetable plantations, aerodromes, schools and hospitals. People believe that the Arctic is a waste-land, incapable of development, useless to mankind, a frozen desert . . . The cold is no obstacle against human habitation . . . Even the plants find that the sunshine which prevails day and night during the Polar summer compensates them for the chill of August . . . We get larger cabbage leaves in the Arctic than on the Volga. The people in our Polar towns eat fresh vegetables, which they grow themselves in the open air . . . Now we are experimenting with wheat and oats."

Smolka doubted the reality of what he heard and decided to see for himself. He saw all that Schmidt had described and more. Once away from the Trans-Siberian Railway, he traveled almost entirely by air. The airplane is a factor in every phase of Arctic life—forest observation, seal fishing, shipping, fur trapping, medicine, education. The airplane is the connecting link between the settled areas of a territory comprising one fourth of the Soviet Union, one and one-half times the size of India, thirty times that of England. It is the connecting link between towns like Igarka and outposts like northenmost Dickson Island and the cities of the South.

Igarka, lying at 67° 27′ 37″ North, with a population of 20,000 in summer and 12,000 in winter, has movie houses, theaters, kindergartens, clubs, a newspaper. In this region five to eight feet of earth below the surface is perpetually frozen. Under the warmth of the well-heated buildings this earth thawed out and foundations settled. Now all buildings are raised ten inches above the surface to allow the air to circulate and maintain a frozen base for construction.

Two significant points are made in this book. First, the policy of the Soviet Government toward the natives of the region. This policy is based on the following facts: There are 150,000 natives in the Arctic. These people know how to live in the North, they are the natural human element that can develop its vast resources. Through raising their cultural level the basis for economic production in the Arctic is enlarged. Therefore, 2,000 teachers have been sent to the North; schools have already been provided for more than 15,000 pupils; 70 percent of the children have learned to read and write. Everything is done to preserve and develop the native culture and at the same time provide the benefits of modern technical equipment and scientific knowledge. How different from our own treatment of the American Indian!

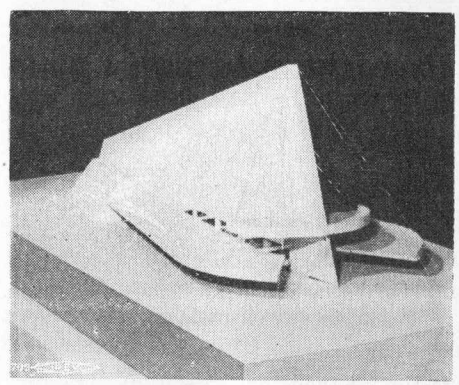
Secondly, we see here what technical science, in agriculture, in engineering, in all fields, can accomplish when planned by, and given the full support of, the government. Perhaps it is not economical, from a business point of view, to set highly trained scientists to work in the far North, growing vegetables in hothouses under the influence of violet rays. But, if the living standard of a nation can be raised through the exploitation of the Arctic resources; if men are needed to develop these resources; and if men cannot remain healthy without fresh vegetables—what further justification is necessary?

Labor Exhibit 1939 World's Fair

THE possibility of presenting labor's story to the general public in a dramatic and educational manner has recently stirred the imagination of trade unionists in all fields.

Never in the history of the country has organized labor attained such importance in the eyes of the public and, because of this sudden prominence, there has been widespread misunderstanding of the character, the purpose, and the background of the labor movement. The purpose of a Labor Exhibit at the New York World's Fair would be to depict vividly the history, objectives, and activities of organized labor in America.

Proposals submitted by representatives of 10 professional unions and associations began to take form in March of this year when a competition was organized by the Architects Section of the New York Chapter. The response was gratifying in that a variety of concep- this year when a competition was or- tured below, resulted from a thorough study of the features of the various schemes submitted. Subsequently, a competition was held among artists and sculptors for murals and sculpture, which were to be an integral part of the exhibit. The various drawings and work of sculptors submitted were presented for judgment to a committee in



which the following participated — Talbot F. Hamlin and Frederick J. Kiesler of Columbia University; Charles G. Hendley, President of the Teachers Union; Hugo Gellert of the Architects, Painters & Sculptors Collaborative; Philip Evergood of the Artists Union and Percival Goodman representing the FAECT.

It was agreed that the final selection of designs, art work, and detailed exhibits should rest with the membership of the labor unions whose objectives were to be presented.

With this in mind, the entire idea of a labor exhibit for the World's Fair was presented at our National Convention. Models and drawings which were exhibited at the Convention sessions attracted wide attention, culminating in a resolution instructing the incoming Executive Board to act on the proposal. The incoming Executive Board lost no time in submitting the proposal to the CIO Conference at Atlantic City.

It is expected that this proposal for a Labor Exhibit will be considered as part of CIO's educational campaign.

WHAT OF THE KILOWATT?

(*Continued from page 6*)

While these developments mark great progress they still fall far short of the attainable. The most efficient tungsten lamps now available deliver only 15.5 per cent of the current consumed in the form of light. This represents at best an efficiency of 2.2 percent, calculating back to the coal burned to produce the power. Efforts to reduce this appalling loss of energy are being steadily pursued. There is at present available for commercial use a 400-watt high-intensity mercury vapor lamp which produces 40 lumens per watt. Since this lamp burns with a bluish glow which is quite unpleasant it cannot be generally used. The same is true of the sodium vapor lamps, which produce a yellow glow. Experiments to duplicate closely the solar spectrum through the development of a highly efficient lamp which employs a combination of vaporized elements are being conducted. The possibilities of producing efficient illumination by means other than the direct use of electricity are also being explored. This might be accomplished through the economical manufacture of synthetic luciferin, which, when oxidized by exposure to the air, emits a cold, diffused, non-glaring light almost 100 percent efficient.

The field of illumination has been greatly influenced by new and more effective methods of application. The photo-electric cell is being used in schools to switch on classroom lights automatically,

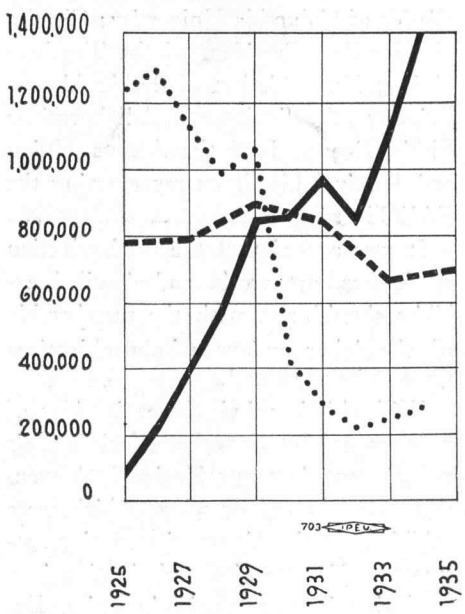


Figure 1

▬▬ Sales of Electric Household Refrigerators
• • • • Sales of Ice-Boxes
▬▬ Production of Ice

when light from the windows falls below a predetermined level. Flood lighting of airports, of buildings, of ball fields is a comparatively recent development.

Much has already been done, and a great deal remains to be done, in the field of highway illumination. In a study by R. E. Simpson of the fatality rate due to street accidents for 60 cities it develops that the ratio of night to day fatalities, according to the grade of street lighting used, was: Grade A, (80 or more lumens per foot)—8 to 1; Grade B, (40 to 80 lumens per foot)—12 to 1; Grade C, (25 to 40 lumens per foot)—21 to 1; Grade D, (less than 25 lumens per foot) —47 to 1. These figures were corrected for relative accident exposure. Another interesting study is that of the National Safety Council based upon figures presented by the commissioners of motor vehicles of the states of New Jersey, Oregon, New York, North Carolina and Pennsylvania. These states have nearly one-fourth the population, automobile registration and gasoline consumption of the United States. Figure 2 shows the number of fatal accidents occurring at various hours of the day in these states in winter, as compared with summer. During all hours of the day except from 5 P.M. to 8 P.M. the number of fatal accidents is less during the winter months. This is due, no doubt, to the fact that there is considerably less motor vehicle traffic during the winter, which again must be partially offset by the more hazardous conditions of winter driving. Between the hours of five and eight, however, the number of fatalities during the winter months rises far above those during the same hours in summer. This can be attributed only to faulty illumination, since these are hours of daylight in summer and darkness in winter. Based upon these figures, the National Safety Council estimates that a reduction of 47 percent in night accidents would be possible, if illumination approximating daylight conditions could be provided.

With the ever-increasing highway congestion, the need for more efficient highway illumination becomes acute. This can be stimulated by the cheapening of electricity and the development of brighter lamps. The Technological Report makes a point of the fact that pressure for better highway illumination would be an added stimulus for rural electrification, since provision could be made on the light poles for carrying a power distribution circuit as well as the lighting system. This seems rather to be putting the cart before the least, that rural electrification would naturally be the major demand. This would then greatly facilitate the development of highway illumination.

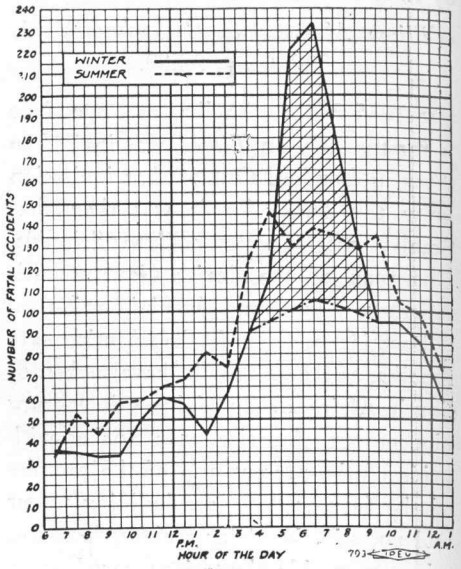


Figure 2

Air-Conditioning

This field includes heating, cooling, circulating, cleaning, humidifying and dehumidifying the air. So great is the interest in this sphere that the U. S. Patent Office reports the arrival of applications for patents on air-conditioning devices at the rate of 300 a day. Systems are now on the market which perform all of the functions listed above, while some include as an added feature a device for absorbing all noise from the air entering a room.

The report quotes from a paper by Professor C. P. Yaglou of the Harvard School of Public Health as follows:

"It is now beginning to be recognized that our present heating methods are crude and much less healthful than nature's method. There seems to be a great difference between the sensations of warmth, comfort, and well-being produced by solar radiation falling upon the human body on a pleasant, cool day, and those which arise in rooms heated by the usual convection methods. The assertion is often made that the common cold and other more serious respiratory diseases begin with the heating season, and there are good reasons to suspect that the effect may be due, at least in part, to the source and nature of radiation employed in modern heating systems."

There is the problem. The solution may lie in the development of sources of illumination which would provide the health-giving rays of the sun found in its

infra-red and ultra-violet spectra, in conjunction with better air-conditioning. New applications of air-conditioning are being developed almost daily. We now have air-conditioned offices, department stores, theatres, restaurants, hotel lobbies, railway cars. Automobiles and airplanes will soon be built with air-conditioning units.

The use of electricity for heating of homes and for cooking has been retarded because of the cost of electric power. Material reductions in cost will greatly stimulate developments along this line. A comparatively new application of electricity for heating lies in the electric hotbed, the use of which is rapidly extending as its advantages in the germination and production of strong, healthy plants become more generally known. Other applications range from the sterilizing of surgical instruments to the removal of snow from sidewalks.

Electrical refrigeration is also being applied in many new ways. In addition to the domestic refrigeration already mentioned, we have mechanically refrigerated trucks, railway cars, show-cases. It is also being applied with great advantage in the meat-packing and dairy industries. It is used in the preservation of various medicinal products and serums. Blood taken from donors can be preserved and used with satisfactory results after seven days. This is being done at the present time by the medical corps in the service of the Spanish Government, resulting in the saving of many lives which would otherwise have been lost.

There are many other developments in the electrical goods industry which cannot possibly be classified or even listed here. The report lists 142 different functions being performed by the photo-electric cell alone. C. C. Furnas, in his book, "The Next Hundred Years," estimates that there are at least 1,000,000 workers in this country doing routine tasks of sorting, inspection or controlling who could be effectively replaced by devices actuated by photo-electric cells. Doubtless, the development and expansion of this industry will result in the displacement of many workers, particularly manual workers. These can probably not be absorbed in the new industries created, for even if it should develop that there are as many jobs in the end as in the beginning, the newer and more advanced skills required in these industries will be beyond the reach of many of those displaced.

This much is certain. The field provides almost endless opportunity for the engineer, the scientist, the research worker. One crying need is greater coordination, a quicker and freer exchange of ideas between research groups. There is at present much duplication of effort, much barking up the wrong tree, which could be eliminated if greater cooperation were possible. It is not unusual today for discoveries to be made and discarded as useless, only to be rediscovered later and found to contain a number of vital applications.

How to Apply for a Charter

1. Any seven (7) persons eligible for membership in the FAECT may apply for a charter by filing an application with the National Office in New York, N. Y.

2. When properly filled out, mail this application to the National Office in New York, New York, accompanied by a charter fee of twenty-five ($25.00) dollars.

3. Since some delay of action on the application may be caused by the necessity of securing recommendations on the application from CIO or FAECT field organizers, it is advisable that you secure such recommendation and mail it with the application.

Bookkeeping and Supplies

Full details on how to keep financial records and to make reports to the National Office of the FAECT will be sent with supplies after a charter is granted. The supplies consist of:

(a) Charter.
(b) Full set of bookkeeping apparatus and instructions.
(c) Membership records.
(d) Membership application cards.
(e) Your charter seal.

Your charter fee defrays, in part, the cost of these supplies. If application for affiliation is disapproved, all money sent will be refunded.

Convention Decisions on Bulletin

The name NATIONAL BULLETIN to be changed to TECHNICAL AMERICA.

Subscription to be mandatory to all members in good standing; each chapter being responsible for payment for these subscriptions to the National Office.

Each chapter to designate one or more responsible members to serve as the publication's committee.

The price of subscription to be $1.50 yearly or 15 cents per copy to non-members.

There is also the need for patent legislation to protect the rights of individual technicians in their discoveries. As things stand today, the benefits all too often accrue to their employers alone. The actual inventors and discoverers work for a salary, usually a very low one; the employer gets the patent rights for nothing, and yet the public does not benefit because the new invention is sold at too high a price or supressed altogether. A strongly organized union could accomplish much in this field.

Lastly, adequate wages and hours legislation will become an absolute necessity. As developments in the electrical goods industry diminish the number of man-hours needed to perform many of our day to day tasks, these hours will be released for other pursuits. All of our work in this field would prove a total loss, if it resulted simply in increasing the length of breadlines, in adding new and heavy burdens to our already overburdened relief agencies, in increasing the number of criminals and otherwise maladjusted individuals. If, on the other hand, these developments result in the enrichment of the lives of all citizens, in greater leisure with the means to utilize it for educational and cultural pursuits and for wholesome recreation, the effort will have been very much worthwhile. These things don't just happen. It is our responsibility to see that they happen! An effective wages and hours bill would be a step in this direction.

Good Wishes from Our Friends

(*Continued from page 2*)

Harold L. Ickes, Secretary of the Interior; Philip F. Lafollette, Governor of Wisconsin; Robert Morss Lovett, Professor of English, University of Chicago; Norman Bel Geddes; Maury Maverick, Representative, U. S. Congress; Philip Murray, Chairman SWOC; James Nelson, President, UMWA; Union Westinghouse Technical Men; W.F. Sutherland; Harold E. Barnett, President Civil Service Employees Association, Queens, N. Y.; Office Staff and Technical School, Chapter 1, FAECT; WPA Section, Chapter 1, FAECT; N. Y. Civil Service Chapter, FAECT, Borough of Queens Council; Association Nacional Para la Planificacion de la Republica Mexicana; Bond van Technisch-en Opzichth Personeel, Holland; Association of Architects, Surveyors and Technical Assistants, England; Jednotny Svaz Soukromych Zamestnancu V CSR, Czechoslovakia.

LET THE FAECT COOP STORE SAVE YOU MONEY

You Save at Least 10% on

Technical Books
Note Books
Drawing Sets
Instruments
Supplies

NOTE

Our first publication "STRUCTURAL STEEL AND REINFORCED CONCRETE" by Charles Kandall, P.E., Instructor at the Federation Technical School, is considered the best book in the field for review and general "brushing-up" $2.00

And 20 to 30% on

Novels
Biographies
Pamphlets
Magazines
Foreign Publication

Write or Visit The Book Shop Before You Buy
IT WILL PAY YOU
Cooperative Store of the Federation Technical School
116 E. 16 St., N. Y.

NATIONAL OFFICERS

Lewis Alan Berne, President
James A. Gaynor, Secretary-Treasurer
Robert M. Sentman, Executive Vice-President
Marcel Scherer, National Organizational Director

CHAPTERS

Boston, Mass.
Chapter 6
*Rose Arsenault
73 Tremont St.

Chicago, Ill.
Chapter 3
*Godfrey Thompson
53 West Jackson Blvd.

Cincinnati, Ohio.
Chapter 22
Dave Levison
3567 Lee Place

Cleveland, Ohio
Chapter 5
Philip Sharnoff
11322 Durant Ave.

Detroit, Mich.
Chapter 18
*Arthur Wilson
618 Charlevoix Bldg.

Los Angeles, Cal.
FAECT, Chapter 9
Room 306
212 W. 3rd St.

Newark, N. J.
Chapter 19
Edward Selden
751 High Street

New York, N. Y.
Chapter 1
*Michael Powsner
114 E. 16th St.
Chapter 23
*Civil Service
(Harold Fink)
114 E. 16th St.

New York (Continued)
Chapter 24
*Union of Marine Draftsmen and Technicians
114 E. 16th St.

Philadelphia, Pa.
Chapter 2
FAECT
34 South 17th St.

Pittsburgh, Pa.
Chapter 4
*Max Aber
134 4th Avenue

Rochester, N. Y.
Chapter 11
*Hugh Johnson
476 Clinton Ave., N.

San Francisco, Cal.
Bay Area, Chapter 25
Miss Caroline Coffin
3016 Hillegass Ave.
Berkeley, Cal.

St. Paul, Minn.
Chapter 21
*Douglas Fraser
814 Globe Bldg.

Washington, D. C.
Chapter 14
*Joseph Leiter
808 17th St., N. W.

Westchester, N. Y.
Chapter 20
*Joseph Fowler
100 Halstead Ave.
Harrison, N. Y.

*Care of Federation of Architects, Engineers, Chemists and Technicians, Chapter Headquarters

FEDERATION TECHNICAL SCHOOL
116 East 16th Street, N. Y. C.

Office hours
10 A. M. to 1 P. M. } Daily
6 P. M. to 9 P. M. }
10 A. M. to 1 P. M. Saturday

Sir:

Please send me the School catalogue and any other information about your courses.

NAME .....

ADDRESS .....

APPLICATION FOR MEMBERSHIP IN THE
Federation of Architects, Engineers, Chemists and Technicians
National Headquarters:
26 East 17th Street,
New York City.

Name .....

Address .....

Where Employed (Address) .....

Unemployed (Last Employer) .....

I am a member of the following Technical Organizations: .....

Signature ..... Date .....

F. A. E. C. T.
26 East 17th Street,
New York City.

Enclosed find $1.50 for which you will please send me 12 issues of TECHNICAL AMERICA.

NAME .....

ADDRESS .....

.....

(check) I AM A MEMBER
I AM NOT A MEMBER

Professional classification .....